

REMARKS

The present application has claims 1-13 pending. Claims 3, 4, 7 and 8 have been amended herein. The amendments are of a minor character and are fully supported by the specification and the originally-filed claims. No new matter has been introduced by the amendments.

Claims 9-13 have been withdrawn from consideration as being directed to a non-elected invention. The Examiner has previously issued a restriction requirement maintaining that claims 2-8 of the subject application are drawn to an invention separate and distinct from the invention of claims 9-13. Claim 1 was asserted as a linking claim, linking the two inventions of the remaining claims. Applicants acknowledge that the restriction requirement has been made final in the present office action and that the Examiner has indicated that upon allowance of the linking claim, claim 1, the restriction requirement would be withdrawn and applicants would be entitled to examination in the present application of all dependent claims containing the limitations and restrictions of the linking claim.

Applicants note that on page 1 of the office action, acknowledgement was not indicated as to Applicants' claim of priority under 35 USC §119. Applicants assume this was a mere oversight since a claim to priority has been made in the present application and a certified copy of the priority document has been sent to the Patent Office. If there is a problem with Applicants' claim of priority under 35 USC §119, please so inform Applicants.

In the September 7, 2005 Office Action, the Examiner rejected claim 4-8 under 35 USC §112, second paragraph, alleging that the claim language "selected from ..." was improper Markush terminology in claims 4 and 8 and that the term "those oxides" in claims 4 and 7 was unclear. Applicants have herein amended claims 4, 7, and 8 in an

effort to overcome the Examiner's rejection. Accordingly, reconsideration of the rejection under 35 USC §112 is hereby requested.

Also in the September 7th Office Action, the Examiner rejected claim 1-8 as allegedly anticipated and/or obvious over Hwang, U.S. Patent No. 6,436,363 ("Hwang"). Applicants disagree with the Examiner's position.

Hwang teaches that the steam reforming catalyst is first deposited on the support and then the partial oxidation catalyst is deposited on the surface of the steam reforming catalyst (see for example, col. 3, lines 51-53; col. 7, lines 13-15 and lines 30-32; and example C). Specifically, Hwang seeks to have the preheated inlet steam initially contact the partial oxidation catalyst, and not the steam reforming catalyst (see col 3, lines 45-47, and col.3, line 63 to col. 4, line 2).

In contrast, in the present application, the layer sequence is reversed. The lower catalyst layer, which is in contact with the support, contains the partial oxidation catalyst and the upper catalyst layer, which is exposed to the inlet steam, contains the steam reforming catalyst. This sequence of the catalyst layers has numerous advantages. As set forth in the application, the reaction may be carried out adiabatically. The catalytic partial oxidation of the starting material is an exothermic reaction and thus can provide energy for the endothermic steam reforming. This sequence of exothermic catalytic partial oxidation followed by the endothermic steam reforming provides a more uniform temperature profile in the overall catalyst. See page 7, lines 1-12 of the application.

Moreover, to the surprise of the inventors, application of the steam reforming catalyst on the partial oxidation catalyst generally reduces the partial oxidation of the product mixture at the inlet. This reduction avoids high temperature peaks that can destroy the catalyst. In addition, hydrogen yield is increased and the content of residual hydrocarbons is reduced. See page 9, lines 12-24 of the application.

Hwang fails to teach the preference for the catalyst layer sequence claimed in the present application. Nor does Hwang recognize the associated advantages of this sequence.

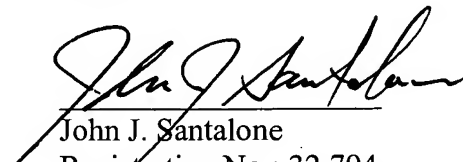
In Applicants' co-pending PCT application (WO 2004/024324) additional comparative examples are provide showing the advantage of this layer structure. An English translation of Applicants' PCT application is provided.

In view of the foregoing amendments, and the remarks set forth above, reconsideration and allowance are respectfully solicited.

Authorization has been given to charge the fee for a three-month extension of time. No additional fee is believed to be due with respect to the filing of this amendment. If any additional fees are due, or an overpayment has been made, please charge, or credit, our Deposit Account No. 11-0171 for such sum.

If the Examiner has any questions regarding the present application, the Examiner is cordially invited to contact Applicants' attorney at the telephone number provided below.

Respectfully submitted,


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